

CMP 436-F401 / CMP F401: Introduction to Java Enterprise Computing
(Java Technologies for Enterprise Computing)
Mathematics and Computer Science
Lehman College, City University of New York
Fall 2013

Instructor: Professor Gwang Jung

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Lecture Schedule: Tuesdays and Thursdays 4:00 - 5:40 PM (*GI 205*)

Office Hours: Tuesdays and Thursdays 12:00 PM- 2:00 PM; Wednesdays: 3:00 PM - 5:30 PM; and other time by appointments

Course Objectives:

This course covers Java enabling technologies (based on Java Enterprise Edition EE 7) for developing and running portable, robust, scalable, reliable and secure server-side applications.

- Topics to include: Introduction to EE 6 and EE 7, Servlets, Java Server Pages, Java Server Faces, JDBC, Enterprise Java Beans (EJB), and Web Services (SOAP, RESTful), Web Sockets, Java Persistence API (JPA), Transaction Management, Contexts and Dependency Injection (CDI), Messaging with Java Message Service (JMS) and Message Driven Beans (MDBs), reviewing other Application Frameworks such as Spring and Struts

Prerequisites:

- CMP 338 (or 326) and Proficiency in Java

References:

1. **Main reference 1:** Java EE 7 Tutorial (August 2013 version): [Java EE 7 tutorial in pdf](#) also available at (<http://docs.oracle.com/javaee/7/tutorial/doc/>)
 1. Note: Some examples will be selected from Java EE 6 Tutorial (January 2013 version): [Java EE 6 tutorial in pdf](#) also available at (<http://docs.oracle.com/javaee/6/tutorial/doc/>). Java EE 6 tutorial examples [Java EE 6 tutorial examples](#)
2. **Main Reference 2:** The NetBeans E-Commerce Tutorial (<http://netbeans.org/kb/docs/javaee/ecommerce/intro.html>)
3. David R Heffelfinger , Java EE 6 Development with NetBeans 7, Packet Publishing, 2011, ISBN 978-1-849512-70-1
4. Java Server Pages ([Introduction to JSP](#))
5. Coreservlets.com (<http://www.coreservlets.com/>)
6. HTML (HTML 5, XHTML), CSS, AJAX, Java Script, etc. <http://www.w3schools.com/default.asp>

Evaluation:

1. Programming Assignments (5 or 6): 30-35%
2. Exams (Midterm, Final): 60-65%
3. Class Participation : 10%
4. Presentation (Graduate Students only): topics -- Controlling concurrent access to entity data with locking, using second-level cache with JPA, Advanced Java EE security, batch processing (from R1)

Grading Scale: TBA; *Exam Schedule:* TBA

Makeup exam might be given only when a student's absence was unavoidable. In such a case, the student must file a formal written request.

Course Outline:

Week	Lecture	Chapter	Topics
1	Introduction to Java EE	R1 (1, 2) R2 (1, 2, 3)	Introduction to Java EE, setting up development environment (NetBeans 7.3, GlassFish application server 3.x, 4.x, MySQL DBMS community server)
2, 3	NetBeans E-Commerce Tutorial	R1 (3, 17) R2 (2-6) R3, R4, R5 (JSP/Servlets)	Requirements analysis, workflow analysis, data modeling, designing application, page views and controller servlet, connecting the application to database, JSP JSTL, EL (expression Language), Servlets, JNDI, Data Source Objects and Connection Pool
4,5	NetBeans E-Commerce Tutorial (cont'd)	R2 (7, 8, 9) R1(26, 27, 28, 35, 36, 37, 48)	Managing database by EJBs (entity and session beans) and JPA, entity manager concept, object relational mapping concept, session management, transactions
6, 7, 8	Java Server Faces	R1(6-12) R3	JSF framework, Facelets, JSF Lifecycle, Managed Beans, Facelets templating, Composite Component, PrimeFaces <i>Mid-term Exam</i>
9, 10, 11	Web Services, Web Sockets, JSON Processing	R1(21, 22, 23, 24, 25, 18, 19)	JAX-WS (SOAP based), JAX-RS(RESTful Web Services), Web Sockets, JSON Processing
11, 12	Contexts and Dependency Injection (CDI)	R1(31, 32, 33, 34)	CDI concepts and examples
13, 14	Messaging with Java Message Services(JMS) and Message Driven beans (MDB)	R1(26, 42, 43), R3	JMS MDB concepts and examples
15	Other application frameworks		Brief introduction to Spring, Struts application framework, graduate student presentations
16	Final Exam		<i>Final Exam</i>

Homework

- HW1: *Study Reference (R1: ch1, ch2; R2: ch1, ch2, ch3)* and install JDK 7, EE SDK 7 (bundled with GlassFish Application Server), apache ant, apache maven

Programming Assignment:

- TBA